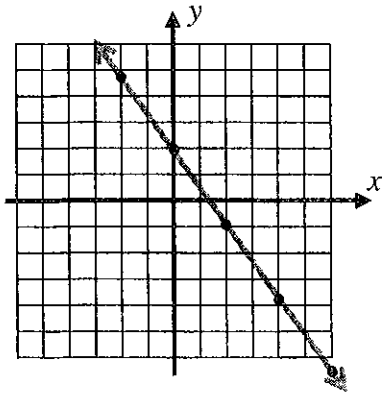
Name: _____ Date: _____

Linear Functions Review

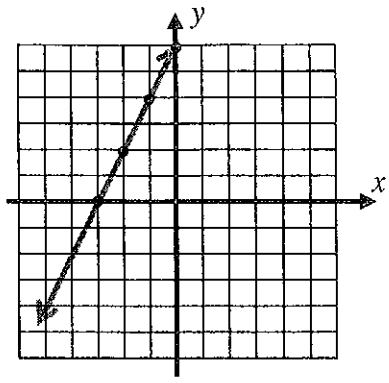
SLOPE
$$m = \frac{Y_2 - Y_1}{X_2 - X_1}$$

FINDING SLOPE

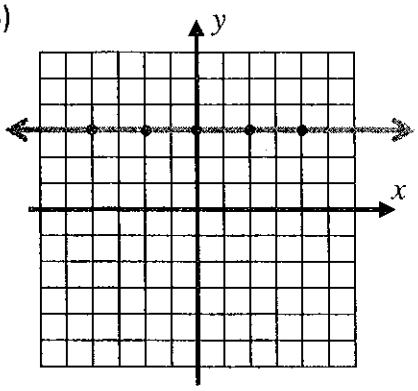
Find the slope of each line.

1) 

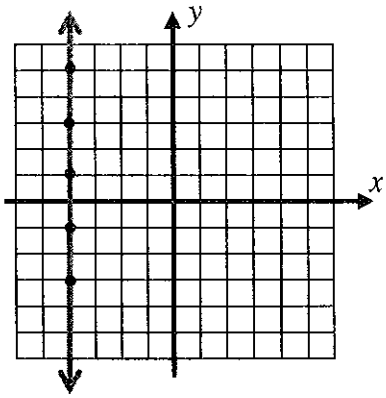
Slope: $\frac{-3}{2}$

2) 

Slope: 2

3) 

Slope: 0

4) 

Slope: und

5) (–1, 4) and (2, 8)

$\frac{8-4}{2-(-1)} = \boxed{\frac{4}{3}}$

Slope: $\frac{4}{3}$

6) (–3, –4) and (0, 5)

$\frac{5-(-4)}{0-(-3)} = \frac{9}{3} = \boxed{3}$

Slope: 3

7) (0, –5) and (1, 6)

$\frac{6-(-5)}{1-0} = \frac{11}{1}$

Slope: 11

8) (–8, 2) and (–4, 3)

$\frac{3-2}{-4-(-8)} = \frac{1}{4}$

Slope: $\frac{1}{4}$

RAPHING EQUATIONS

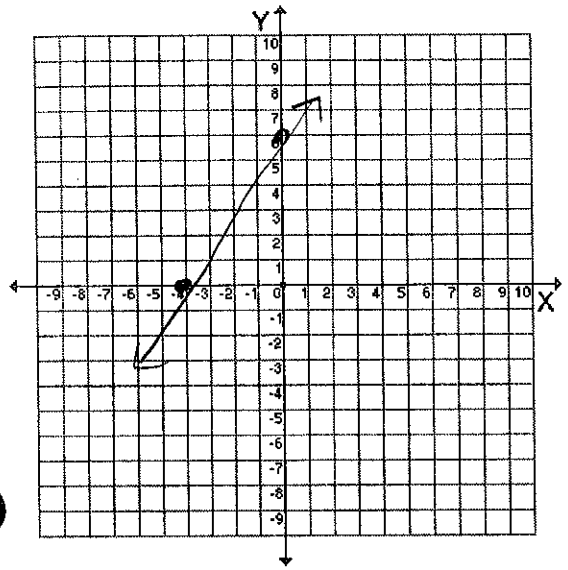
or each equation, solve for *y*, determine the slope, *x*-intercept, and *y*-intercept.

) $-3x + 2y = 12$

$-2y = 3x + 12$

$y = \frac{3}{2}x + 6$ slope = $\frac{3}{2}$

y-intercept = 6 *x*-intercept = -4

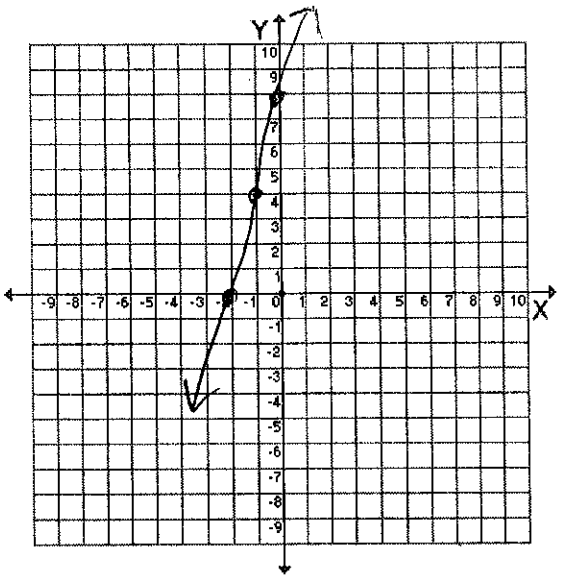


10) $-2y + 8x = -16$

$-2y = -8x - 16$

$y = 4x + 8$ slope = 4

y-intercept = 8 *x*-intercept = -2

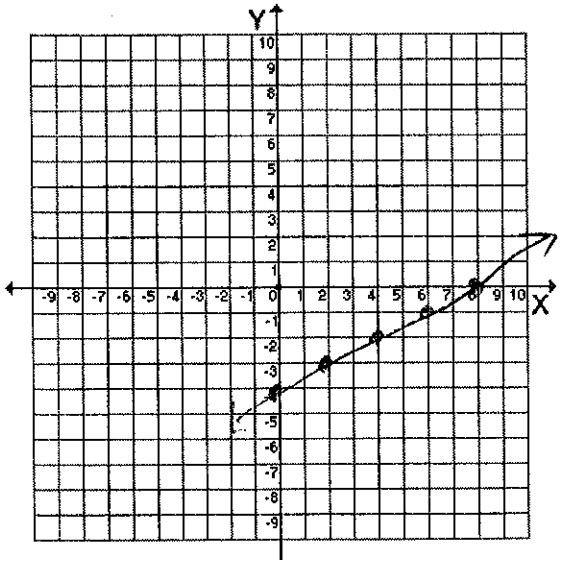


11) $x - 2y = 8$

$-2y = -x + 8$

$y = \frac{1}{2}x - 4$ slope = $\frac{1}{2}$

y-intercept = -4 *x*-intercept = 8

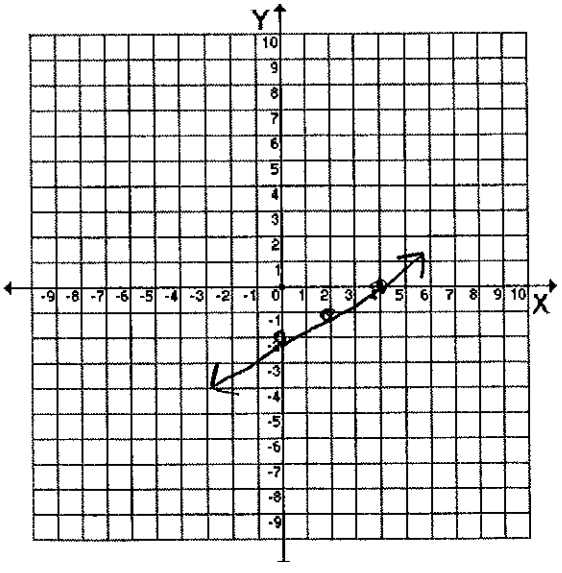


12) $2x - 4y = 8$

$-4y = -2x + 8$

$y = \frac{1}{2}x - 2$ slope = $\frac{1}{2}$

y-intercept = -2 *x*-intercept = 4



WRITING EQUATIONS OF LINES

Write the equation of the line with the given information.

$y - y_1 = m(x - x_1)$ | $y = mx + b$

13) Write the equation of a line that has a slope of 5 and goes through the point (6, 2).

$y = 5x + b$

$2 = 5(6) + b$

$2 = 30 + b$

$-28 = b$

$y = 5x - 28$

14) Write the equation of a line that has a slope of –3 and goes through the point (1, 9).

$y = -3x + b$

$9 = -3(1) + b$

$9 = -3 + b$

$+3 \quad +3$

$12 = b$

$y = -3x + 12$

15) Write the equation of a line that goes through the points (0, 3) and (5, –7).

$\frac{-7-3}{5-0} = \frac{-10}{5} = -2$

$y = -2x + b$

$3 = -2(0) + b$

$3 = 0 + b$

$3 = b$

$y = -2x + 3$

16) Write the equation of a line that goes through the points (–6, 7) and (–4, 3).

$\frac{3-7}{-4-(-6)} = \frac{-4}{2} = -2$

$y = -2x + b$

$3 = -2(-4) + b$

$3 = 8 + b$

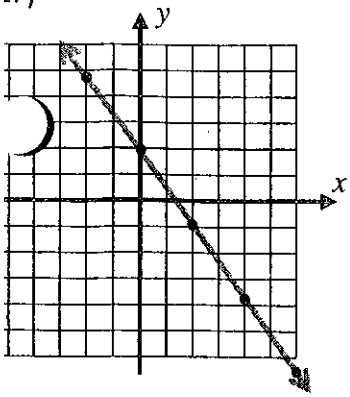
$-8 \quad -8$

$-5 = b$

$y = -2x - 5$

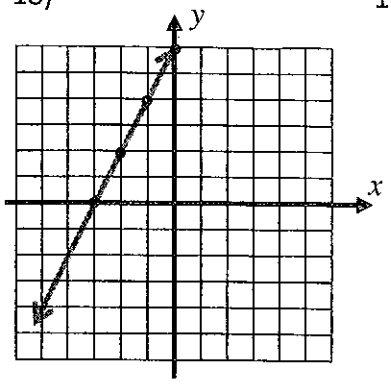
Write the equation of each graph given.

17)



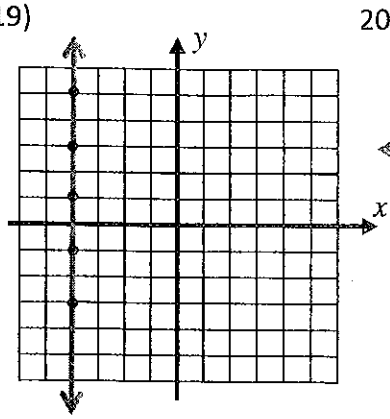
Equation: $y = \frac{-3}{2}x + 2$

18)



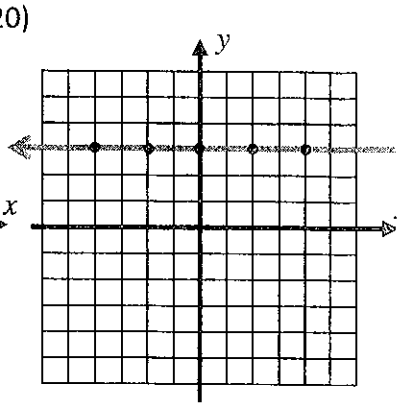
Equation $y = 2x + 6$

19)



Equation $x = -4$

20)



Equation $y = 3$

PARALLEL AND PERPENDICULAR LINES

21) Write an equation of a line parallel to the *x*-axis. $y =$ ____

22) Write an equation of a line parallel to the *y*-axis. $x =$ ____

23) Write an equation of a line that is parallel to the x-axis and passes through the point (1, 3). $y = 3$

24) Write an equation of a line that is parallel to the y-axis and passes through the point (1, 3). $x = 1$

25) Write an equation of a line parallel to the graph $3x - 9y = 21$. $y = \frac{1}{3}x + 2$

$-9y = -3x + 21$

$y = \frac{1}{3}x +$ ____

26) Write an equation of a line perpendicular to the graph $3x - 9y = 21$. $y = -3x + 2$